

Geometry WS 2.3 – Deductive Reasoning

KEY

1. Solve the logic puzzle below.

Active Clues

1. The Jeep rental is for a period 1 day longer than the Chevrolet reservation.
2. The 4 day reservation is either the Kia reservation or the Nissan rental.
3. Yolanda Young's reservation is for 4 days.
4. Gena Graham's reservation is for the Chevrolet.
5. The Nissan reservation is either the 3 day rental or Kathy Koch's rental.

Backstory And Goal

Arnold's got a number of car rental reservations to handle today. Help him out by matching each customer to her car, pickup location and contract length.

<u>Days</u>	<u>Cust</u>	<u>Cars</u>
2	Gena	Chevy
3	Ann	Jeep
4	Yolanda	Kia
5	Kathy	Nissan

		customers				cars			
		Ann Alexander	Gena Graham	Kathy Koch	Yolanda Young	Chevrolet	Jeep	Kia	Nissan
contract length	2 days								
	3 days								
	4 days								
	5 days								
cars	Chevrolet								
	Jeep								
	Kia								
	Nissan								

Use the statements to draw a logical conclusion.

2. If an animal has two wings, then it is a bird. If an animal is a bird, then it could be a Cardinal.  
 John sees an animal with two wings. Conclusion: It could be a cardinal.

3. If you live in Raymore or Peculiar, then you go to RPHS. If you go to RPHS, then your high school mascot is a Panther.  
 Jamal goes to RPHS. Conclusion: HS mascot is a panther

4. If you play sports, then you are an athlete. If you are an athlete, then you should be in good physical condition.  
 Alyssa plays sports. Conclusion: She is in good physical condition

5. If you want to major in Journalism, then you should go to Mizzou. If you like working in news-media, then you want to major in Journalism.  
 Shelby likes working in news-media. Conclusion: She should go to Mizzou.

6. If you are an engineer, then you are good at math. If you are good at math, then you like to work with numbers.

Dan is an engineer. Conclusion: he likes to work w/ numbers

7. If a polygon has 3 sides, then it is a triangle. If a polygon is a triangle, then it could have a hypotenuse.

Polygon A has 3 sides. Conclusion: it could have a hypotenuse

Decide if the statement is true or false. If false, please provide a counterexample.

8. If a figure has 4 sides, then it is a square.

False; rectangle

9. If  $x > y$ , then  $|x| > |y|$ .

False;  $3 > -5$  but  $|3| \neq |-5|$

10. If you live in the Raymore Peculiar school district, then you live in Peculiar, MO.

False; you could live in Raymore

Use the true statements below to determine whether or not each conclusion is valid.

- I. The Top Thrill Dragster is at Cedar Point amusement park in Sandusky, OH.
  - II. Carter and Mary go to Cedar Point.
  - III. The Top Thrill Dragster roller coaster reaches speeds of 120 mph.
  - IV. When Carter goes to an amusement park, he rides all of the roller coasters.
11. Carter went to Sandusky, OH. Valid
12. Mary rode the Top Thrill Dragster. Invalid
13. Carter rode a roller coaster that travels 120 mph. Valid
14. Mary rode a roller coaster that travels 120 mph. Invalid
15. If Cassie goes to the skate park, Hanna and Amy will go. If Hanna or Amy goes to the skate park, then Marc will go. If Marc goes to the skate park, then Dallas will go. If only two of the five people went to the skate park, who were they?

Marc and Dallas